Wisconsin Entomological Society Newsletter

Volume 34, Number 3 **October 2007**

WISCONSIN ENTOMOLOGICAL SOCIETY FALL MEETING

The annual fall meeting of the Wisconsin Entomological Society will occur on **Saturday, October 13, 2007**, from **Noon - 5:00 P.M.** This start time is earlier than in past years. We'll again meet in Russell Labs on the UW-Madison campus, where parking is freely available in the ramp behind Russell Labs and Steenbock Library. Being our annual meeting,, we will have a brief Treasurer's Report and elect officers.

We will again have a photo salon, and encourage your submission of images whether or not you are able to attend the meeting. Send 1-5 images on a CD to Phil Pellitteri, Entomology Dept., 1630 Linden Dr., University of Wisconsin, Madison, WI, 53706. (Since we are judging photo quality of technique as well as composition and subject matter, and since images may be sent by email using more or less memory, I suggest we all use this CD method of submission so the playing field is more level.) Please include some information about each image, information Phil will share with the voting audience when your image(s) are shown. You could simply bring your CD to the meeting. We will have a laptop with projection equipment. We will also have a slide projector so if you're tempted to delve into your archival collection, please do so. This would inject an historical element, which would be delightful. An image of a young Les Ferge holding a beetle or Dan Young holding a moth could win on subject matter alone! This photo salon is always a pleasure. Last year, Mike Reese ran away with top honors, garnering first, second, and even third place. So, submit your best and we'll give Mike a challenge.

We will have several, informal, 30-minute presentations, as we did at our spring meeting. Our four speakers will be:

Kyle Johnson, of UW-Madison, who will share with us the joys of winter insect collecting (OUTDOORS!) right here in Wisconsin;

Nadine Kriska, of UW-Madison, will present, "An Entomologist Goes to South Africa;"

Rafael Rodriquez, of UW-Milwaukee, will present, "Causes of Signal Divergence in *Enchenopa* Treehoppers;" and

Bill Smith, of Wisconsin DNR, will tell us about the DNR study of peatland insects. This will be a mixture of snow and ice, sphagnum and spruce, striped zebras and striped treehoppers--surely we cannot confuse the images of these various speakers!

If you are not traveling too far, please bring some food and drink to share. We habitually take breaks to mingle with each other at the buffet table. Cheese and crackers, summer sausage, chips, fruit, drinks, cookies, bars, and cake (and plates, cups, napkins and flatware) were all enjoyed at our spring meeting. Let's enjoy all these again. You might also bring some insect specimens to show to us--something flashy, something rare, something curious, something you can't identify-- anything you wish. Perhaps there's a new book you want us to know about; please bring that along, too. These meetings are always informal and relaxed, and we hope you'll be able to come and enjoy this special afternoon with us. Questions? Email me at awilliam@facstaff.wisc.edu .

Hope to see you there,
Andrew Williams, President

In This Issue...

The Wisconsin Entomological Society Newsletter is published three times a year, at irregular intervals. It is provided to encourage and facilitate the exchange of information by the membership, and to keep the members informed of the activities of the organization. Members are strongly encouraged to contribute items for inclusion in the newsletter. Please send all news items, notes, new or interesting insect records, season summaries, and research requests to the editor:

Janice Stiefel, 2125 Grove Road, Bailey's Harbor, WI 54202, (920) 839-9796, e-mail: jstiefel@itol.com

NOTE: Please report any address changes to Les Ferge, 7119 Hubbard Ave., Middleton, WI 53562. e-mail: ferge@netzero.net

THE SEXTON BEETLE

Article and Photo by Carroll Rudy

On warm summer nights when I am attracting moths to lights, I find many other insects that are also lured to lights. Among the frequent visitors are one or more Sexton Beetles (*Nicrophrous sp.*) Sextons are large, attractive beetles; as large as June Bugs, but slenderer; shiny black insects with bright orange splotches on their wing covers. Anyone seeing one is sure to be impressed by its size and color. Though they are one of our largest beetles, they aren't often seen because they seek darkness, hiding in daylight hours. Why nocturnal insects are attracted to artificial lights has long puzzled scientists, but the answer seems to be that they are "programmed" to navigate by the moon and stars. While going about their night-time business, bright artificial lights confuse and dazzle them making them lose their way. Then they circle or land near the lights. This is an effect similar to nocturnal deer or opossums that are dazzled by automobile lights, sometimes "freezing" and losing their lives.

—A Sexton is a church official, one of whose historical duties was digging graves in the church cemetery.
—Nicrophorus comes from a misspelling of the Greek "necro" which is the stem of many words relating to death and phore meaning to bear: thus "bearer of the dead."

But what do Sexton Beetles have to do with grave diggers? The several species of *Nicrophorus* beetles are also called burying beetles, because they bury small dead creatures such as mice and songbirds. Attracted to the odor of carrion from up to two miles away, they soon detect the dead bird that hit your window, or the dead mouse abandoned by the neighborhood cat.

Nicrophorus are amazing creatures. They demonstrate a level of parental care and devotion usually found only in birds and mammals, but rare in insects other than bees, ants and wasps. A male and a female Sexton Beetle will pair-up to claim a carcass and together proceed to excavate the earth under it, gradually causing the body to sink out of sight in the earth.

They carefully prepare it for the use of their young by removing the hair or feathers and gluing them to the inside of the burial cavity to prepare a "coffin" of sorts. They also excrete preservative fluids on the meat; essentially "embalming" it so that it will still be usable when their eggs hatch. The pair tend their food cache carefully, removing competitors such as maggots and worms while guarding their eggs and young. When the eggs hatch, the parent beetles produce a fluid which they regurgitate to feed the tiny larvae until they are large enough to feed themselves. Eventually the larvae consume the carcass of the dead animal.

The parent beetles are able somehow to judge how many young they can rear on any given carcass, producing only the number of offspring that can mature, by eating any surplus eggs. Eventually the young pupate and become adult Sexton Beetles to carry on the tradition of cleaning up dead animals.

I noticed that many of the beetles visiting my windows were covered with large mites. The mites seek darkness, and when lighted with a flashlight, quickly take cover by running to the underside of the beetle. I assumed they were parasites, and pitied the poor beetles who were literally covered with crawling masses of mites. But I was wrong.

Some research quickly informed me that the mites are phoretic, not parasitic. They simply use the beetles for "airline" transport. By sticking to their beetle, they will eventually be taken to a dead carcass. This sounds like competition for food for the beetles, but it isn't. The two species are compatible. The mites also produce young on the dead meat and these mites help kill fly-eggs, maggots, and other carrion-eating competitors. It is a nice illustration of two species that help each other.

The high number of Sexton Beetles in my yard last summer was probably due the fact that so many birds were killed by extended heavy rains last spring. Baby birds in nests are not compatible with heavy rainfall that lasts for days. Not only is it impossible for the parents to leave the babies unprotected to find food, the nests become saturated and the babies die of hypothermia. Eventually the adult birds must leave the nest to seek food and the young are exposed to cold and rain. Many adult birds also die of hypothermia when they get saturated. Insects are killed by heavy rain as well, making food scarce for birds. There were so many dead birds around our yard at the time that the air smelled of death for at least a week.

In developed areas, carrion beetles have become rare because there is not enough food for them. If you should see a large shiny black and orange beetle checking out a dead bird in your garden, leave it alone. Within a few hours the bird will be buried.

The bounty of dead birds in our yard attracted many carrion beetles who produced a bumper crop of young and mites. In nature, nothing goes to waste.

Carroll observes insects from her home in Calumet County.

A MID-SEASON REPORT FROM THE STATE DIAGNOSTIC LAB

Article and Photos by Phil Pellitteri

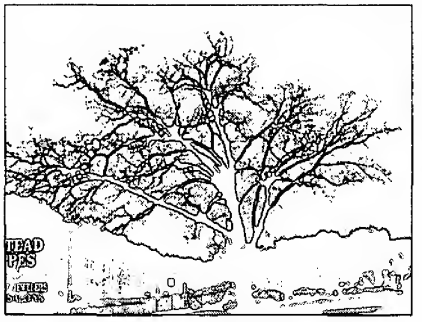
As a number of WES members traveled this June to experience Brood XIII of the 17-year Cicada. I made three trips during June to Big Foot Beach State Park in Lake Geneva. I convinced my neighbor and his wife to come down and was delighted to hear that, for them, it was better than expected. The park manager did report that they had to prevent people from collecting cicadas in the park. Some people were using five-gallon buckets and were scrapping tree trunks to gather enough cicadas to eat. I only found one of the two species that emerge in Wisconsin. What was a pleasant surprise were the number of small populations in the SW part of the state. I had

Seventeen emergence holes of the 17-Year Cicada.

17-Year Cicada Skins

reports of noisy woodlots or tree twigs damaged by egg laying from Arena, Spring Green, Muscoda, Fennimore, Richland Center, Boscobel and Dodgeville. Most of these sites are along the Wisconsin River valley.

The lovely May weather was good for us, but also resulted in a big population of Gypsy Moth caterpillars. The fungus disease that can cause population collapses needs cool, wet weather in May. We had a number of large Bur Oaks in Madison completely defoliated and



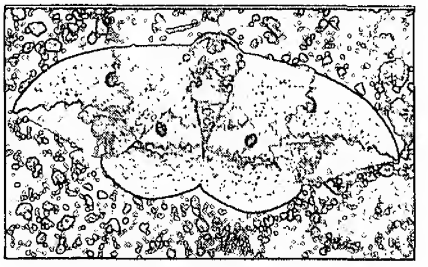
Bur Oak after being defoliated by Gypsy Moth Caterpillars

had larvae crawling all over—including the home of the Chancellor of UW Madison. The central part of the state also had quite a bit of activity. I would expect the moth catches to be very high this year.

Red Admiral Butterflies were everywhere... so much so that it even caught the attention of the news media. I had a couple of calls during mid-May of nettle defoliation by spiny caterpillars—so it was not a complete surprise. It was fun to see clouds of butterflies for two weeks. I had people tell me they drove as slowly as they could down the highway and also witnessed birds being trained to just sit by the side of the road waiting for an easy meal of stunned butterflies.

The insect of the year so far is the Wooly Alder Aphid (*Paraprociphilus tessellates*). It is also known as the Maple Blight Aphid. The flying white "fuzzy flies" or the large amount of honey dew accumulating on and below maple trees are the common reports that come in. This insect winters on silver maple and alder is the summer host. They are fun to watch fly and have the longest white filaments of any wooly aphid I've seen. See my website for photos of the aphids and other insects from this summer's season. http://www.entomology.wisc.edu/diaglab/07hilite/06_19.html

The mid-priced digital camera with macro capabilities is the second best technology I have seen in my career. (Power Point is number one.) I was out walking in the woods one morning and had a recently emerged Imperial Moth on the path in front of me. I took some pictures and intended to bring the moth back to the lab when I finished my walk, but by the time I got back to the site all that was left was four wings. I should have known better. The digital camera has



Imperial Moth (*Eacles imperialis*)

forced me to totally abandoned my 35mm slide collection, and I have so many images that my computer has a hard time managing the data base. The neat thing is I have lots of insect pictures I would never have been able to obtain with my old camera. I will have some good ones to share at the October meeting.

There are large numbers of Cicada Killers (*Sphecius speciosus*) flying around this year. I rarely saw them when I first started in the lab but they have become very common in the southern part of the state. Japanese Beetles continue to spread with populations in Green Bay and Appleton taking off this year. We have not seen the Emerald Ash borer yet but they have been found in Pennsylvania and the infestation in Illinois keeps getting bigger. I am not praying for a frost yet but it will not be long.

Phil is the Distinguished Faculty Associate at the College of Agriculture & Life Sciences, Dept. of Entomology, UW-Madison. He is often heard answering insect questions on the radio.

Editor's Note: I found a group of Woolly Alder Aphids in 2004 on the trunk of an alder. See photos at: http://bugguide.net/node/view/116883

MYSTERY INSECT

CAN YOU IDENTIFY IT?

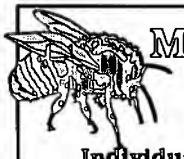
Photo: Mike Reese, July 25, 2007

This insect is less than 5 mm in length with a long proboscis which it uses to nectar on a variety of flowers. The thorax is yellow with three black lines. The hump-backed profile is distinctive but little is known about the distribution of the two species that are found in the eastern United States. Distributions for this species published in 2003 does not include Wisconsin! The fourth abdominal segment on this species has whitish scales. Larvae of this genera feed on solitary wasps. Two color photos are posted here if you are interested.

http://www.wisconsinbutterflies.org/mysteryinsect.htm

—Mike Reese

Please send answer to the editor.



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Please make check payable to WES and send to Les Ferge, 7119 Hubbard Ave., Middleton, WI 53562-3231

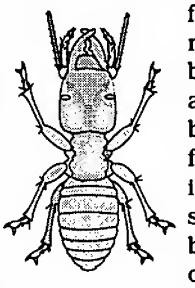
Dues Notices for 2008 will be sent to members in December.

INSECT BOOKS AND WEBSITES

by Andrew Khitsun

In the past few months, several new books appeared on the shelves. Among them yet another **Field Guide to Insects and Spiders of North America**, published by National Wildlife Federation. Unlike totally useless guides of the past featuring children book – like pictures, this one employs decent, albeit small, photos (including a few contributed by our editor Janice Stiefel). Also, a bigger (and more expensive) photo guide **Insects: Their Natural History & Diversity** by S.Marshall will help you identify even more critters in your collection or garden. There is also a companion volume to already mentioned 100 Caterpillars, called **100 Butterflies & Moths** by J.Miller and others, offering huge colored photos of Lepidoptera from Costa Rica. Of more serious works, second edition of **The Bees of the World** by C.Michener provides comprehensive treatment of the 1200 genera and subgenera of the Apiformes. The book is expensive, but if you're only interested in American insects, you can limit the damage to your wallet by seeking **The Bee Genera of North & Central America** by the same author. If you like to know your pests, there is a little known but very informative series under the title PCT (pest control technology). It includes 5 books: **Structure – Infesting Beetles** (2 Volumes), **Structure – Infesting Flies**, **Structure – Infesting Ants** and **Urban Spiders**, all written by Stoy Hedges with partners. They feature photos, pictures and detailed descriptions of most insects found in the people's dwellings. Unfortunately, some of them are hard to find through general booksellers, but you can head to ***Bioquip*** at **http://www.bioquip.com** and order it there. You can obtain Bioquip's printed catalog for $5.00 with your order ($10,00 by itself) or free one on CD at any time. The company sells lots of insect-related merchandise and equipment, including many books featured in this column. For those who like curiosities, **Man Eating Bugs** (read man eats bugs, not bugs eat man) by P.Menzel is an eye-opener as far as insect culinary goes, and beautifully illustrated too. If you enjoyed book called The Songs of Insects mentioned in the previous issue, head to ***Singing Insects of North America*** at **http://buzz.ifas.ufl.edu/** and find hundreds of images and songs! Also, ***Cicadas of Michigan*** at **http://insects.ummz.lsa.umich.edu/fauna/Michigan_Cicadas/Michigan/** offers pictures and songs of that interesting group, as well as ***Cicada Central*** at http://hydrodictyon.eeb.uconn.edu/projects/cicada/cc.html. ***Cicada Mania*** at **das/http://www.cicadamania.com/cica** has all kinds of info, photos and even videos featuring these wonderful insects.

TERMITES & ASSASSIN BUGS



We are familiar with using bait to lure prey. Both live and artificial bait are used to catch fish. Assassin bugs are very fond of termites. A young assassin bug will glue bits of the termites' nest to its body until it is nearly invisible against the nest. The bug will then patiently wait for a termite to wander too close. The first termite caught is drained by the assassin bug and then its body is dangled in front of an opening in the nest. As a termite grabs for the body of its nest mate, the assassin bugs pulls the body back. The termite is lured further out of the nest until it is grabbed for lunch. The second termite is then used as bait. Scientists report that they once watched a single assassin bug dispose of 31 termites in three hours doing this!

Ref: *"Bugs that Use Bait."* Science 1983.

17-Year Cicada
Magicicada septendecim
Bigfoot Beach State Park
Lake Geneva, Wisconsin

A SENSE OF WONDER

Article and Photos by Carroll Rudy

"The most beautiful thing we can experience is the mysterious.
It is the source of all true art and all science.
He to whom this emotion is a stranger,
who can no longer pause to wonder and stand rapt in awe, is as good as dead:
his eyes are closed."

—Albert Einstein

As I walked along the woodland trail, a man beside the path was intensely occupied photographing an insect on a tree trunk with a large camera. He had a microphone attached and was recording the sounds he heard at the same time. As I passed close by him on the leafy path, I remarked that the insects were really wonderful weren't they? "Aren't they fantastic?" he replied.

The objects of our mutual wonder were 17-year Cicadas. We had come to spend time at Bigfoot Beach State Park in Lake Geneva, Wisconsin to enjoy the emergence of a brood of Periodical Cicadas. My husband, Martin, and I were camping there to enjoy living among them. Neither of us had ever seen a 17- year Cicada. We have read about them and seen photos, of course, as well as the annual news clips featuring horrified bug-phobic homeowners who want to get rid of them, and objective biologists who explain the life-cycle in cold scientific jargon. The sense of wonder escapes them, as it does most modern people who have forgotten how to marvel at nature's incredible wonders. That is probably why we had the entire park to ourselves.

17-Year Cicada
newly-emerged nymph

That millions of insects emerge from beneath the dark earth during the same week in time in an area that can include as many as 14 states after 17 years of living underground, seems to me a genuine real-life miracle. I wanted to see it for myself. No magazine article or film-clip does it justice. I was not disappointed.

We'd chosen our campground with care, after checking maps of the Cicada's range, reading regional newspapers on-line, and calling ahead to ask park personnel if the insects had emerged yet. What we saw when we arrived was very impressive. As we pitched our tent we could hear a constant humming high in the huge oak trees. The ground was full of holes the size of a man's finger from which nymphs had emerged. The tree trunks, bushes and weeds were covered with the empty shells of nymphs—left behind when their adult owners had split the thorax open from inside, crawled out, white and soft. They had departed after their skins got hard and dark and their wings expanded and dried, crisp and clear as cellophane. More impressive yet, were the piles of empty nymph skins lying on the ground. A heavy rainstorm had washed them off the trees and you couldn't take a step without stepping on them with sounds like crunching dry cornflakes.

Most impressive of all was that the bushes and weeds were drooping under heavy burdens of live inch-and-a-half-long insects. Each grapevine leaf held 5 to 10 of them staring up with fiery red eyes and vacant expressions. They are beautiful insects. In addition to the scarlet eyes, the wing veins are also red. A few rare individuals had white eyes and white wing veins. It was evening and they were just sitting there, motionless...waiting. Waiting for what? Waiting for morning: for the sunshine to warm them so they could fly up into the trees?

When the morning sun peeked through our tent window we could hear them humming in the trees again. Many were flying. The sound was a restful background hum, officially called a chorus, produced in synchrony by tens of thousands of males all at once, each hoping to attract a female. The males have membranes called tymbals on each side of their abdomens which are hollow, like drums, to amplify sound. Females are soundless and filled with eggs.

After she mates, each female injects her eggs into a tree's twig. The twig will die and fall to the ground, where the eggs hatch and tiny, barely-visible nymphs dig themselves into the ground. There they will suck juices from tree rootlets and never see light again for 17 years. Then the instinct bound in their genes will tell them to dig tunnels to the surface and repeat what we saw that day.

Please see, **CICADA**, *Page 6*

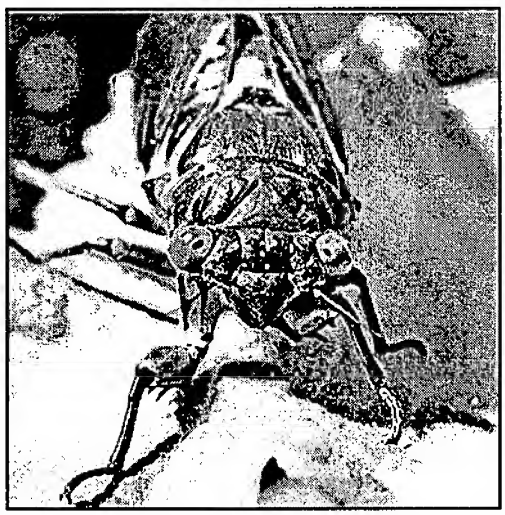
CICADA *from Page 5*

I've been looking forward to this camping trip for years. The southern border of Wisconsin is at the extreme northern edge of the range of these southeastern insects known as Periodical Cicadas. There are 6 to 10 species, depending species depending on how you classify them: Three species have 17 -year life cycles and the rest have 13- year cycles. All the adults emerge at the same time; mate, lay eggs and die within a month's time; not to appear again for 13 or 17 years, depending on the species. There are 15 broods, or less, depending on how you classify them. Each brood is composed of those that emerge in a given year. The Illinois brood, known as Brood XIII (13) that is found in parts of four contiguous states emerged this year. There is a brood emergence almost every year somewhere in the eastern U.S., so a carefully planned trip in June can put anyone in touch with these wonderful insects.

The usual comment from people whose sense of wonder died long ago is: "What good are they?" How sad that attitude is. Anyone camping with them couldn't help but be awakened at dawn by a Blue Jay celebration. Excited birds were enjoying a gourmet breakfast of newly-emerged, soft, white cicadas. Every species of bird big enough to swallow one was there. During the night we heard Screech Owls enjoying the feast, too.

Animals of any species that like to eat insects, fatten themselves on the month-long glut of food. Undoubtedly, they rear more babies than usual. And therein lies the secret of this puzzling life cycle. No matter how many insects the predators eat, they don't make a dent in the cicada population, and plenty are left to reproduce. Long periods between brood emergences assure the predator population does not increase long-term because of the extra food. That is why the cicadas show no fear. Individual lives sacrificed are a necessary part of a larger survival strategy. You can examine and handle them as much as you please. They will land on you or crawl up your legs. They cannot hurt you. They have no other defense mechanisms. And they are delicious, according to the animals.

Some people eat them, too, and declare them delicious. You can find numerous recipes on the Internet. Noting that all the recipes are heavily spiced, I decided they are pulling your leg. We ate some and they have all the appeal of raw okra. Maybe some people like raw okra, but I'm not one of them. Cooked, they tasted the same. I even tried chocolate-covered toasted cicadas (a gourmet application that makes crickets, grasshoppers and ants very tasty). They tasted like chocolate-covered raw okra. So much for the joke I was going to play on my friends. Aristotle, who first described them scientifically, supposedly enjoyed dining on cicadas, but Aristotle must not have had a good deli in his neighborhood.



17-Year Cicada, frontal view

The sense of wonder that has died in so many modern people is alive and well in children, who are fascinated by all things that crawl and fly. It seems to die as they mature when that jaw-dropping wonder at things beautiful and magical is superceded by what ones peers designate as "cool." From then on, society, peers, commerce, and the media tell us what is "cool." I have never trusted my peers to decide for me what is truly wonderful.

It was not always so. Our ancestors, who lived close to nature, appreciated the beauty and wonder of many special creatures. Cicadas are common in Mediterranean countries where they provided incessant summer background music for millennia of ancient cultures. The seeming miracle of strange creatures emerging from the earth, shedding their skins, appearing with clean, white bodies, growing wings and flying away seemed miraculous to them and became symbolic of perpetual youth, as well as resurection and life after death. It even inspired the idea that the resurrected dead might also emerge from the earth, grow wings, fly up into the sky and sing. (Think Angels.)

Mythological stories arose of course, like the story of Tithonus, The Cicada-man, a handsome lad who fell in love with the goddess of the dawn. In gratitude for his love, she granted him the gift of immortality. But as in most such stories, this divine gift had a catch. His immortality was accompanied by aging. As poor Tithonus got older and older, he became smaller and smaller, until at last there was nothing left of him but his shrill voice. He had turned into a cicada.

Athenians imprinted the cicada's image on coins, and Thucydides, a Greek historian, tells us that Athenians once wore golden cicadas in their hair. It's also said that the cicadas were emblematic of the Athenian's belief that their ancestors sprang from the local soil, giving them an inalienable right to the land.

Socrates related a myth that cicadas were once human beings. After inventing music, all they did was make music, forgetting to eat or drink until their bodies wasted away. The muses rewarded them for their dedication by turning them into cicadas.

"O resonant cicada, drunk on dewy droplets.

You sing your rustic song that sounds in lonely places.

Perched with your saw-like limbs, high up among the leaves

You shrill forth the lyre's tune with your sun-darkened body."

—Meleager, ancient Syrian poet

Please see, **CICADA**, *Page 7*

CICADA, *from Page 6*

During the Dark Ages, superstitious Europeans greatly feared anything that appeared to be magical. Creatures with powers they couldn't understand became objects to be avoided, lest they be the agents of dark spirits. Snakes, bats, spiders, insects, toads, salamanders, owls, moths and even cats had powers people don't have, so they were maligned as evil. Myths arose about their evil powers and companionship with witches. Any creature that figured in ancient mythology was regarded as possibly pagan, and also to be feared. Horrible plagues came from they-knew-not-where: possibly punishments for sin. No, you couldn't be too careful about strange creatures and odd people.

Today we know why creatures can see in the dark, why toads have warts, how snakes navigate and where cicadas come from when they magically appear in millions from under the earth. So it's time to re-awaken that sense of wonder, open your eyes and enjoy the wonderful world around you. It's much more wonderful than anything you can read or see in films.

After about a month, all the cicadas are dead, their 17-year missions completed, littering the ground with their small bodies. They return to the earth from which they came, infusing the forest with a burst of fertility. In nature nothing goes to waste.

An Internet source with good background information and further resources can be found at: http://www.lcfpd.org/docs/Magicicada_in

Editor's Note: I hope you enjoy this article half as much as I did. It is an extremely well-researched and well-written expose of the very mysterious 17-Year Cicada. Thank you, Carroll for sharing your experiences and research with us.

"And with childlike credulous affection,
We behold those tender wings expand,
Emblems of our own great resurrection,
Emblems of the bright and better land."
—Author Unknown

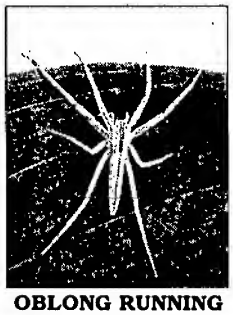
Answers to June 2007 MYSTERY INSECT

CHUCK PEARSON
Adrian, Michigan

The mystery arthropod in the June 2007 Newsletter is an Oblong Running Crab Spider (*Tibellus oblongus*). The reference I used is *Spiders of the North Woods*.

RON HUBER
Bloomington, Minnesota

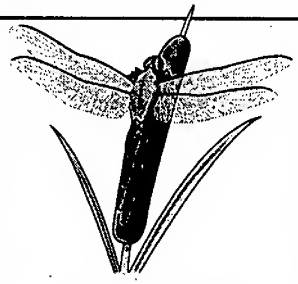
Right after emailing Dr. Krauth, we received the latest issue of *WES NEWSLETTER*—a pleasant surprise! Naturally, I had to quickly check the Mystery Insect. It looks like one of the Running Crab Spiders (family Philodromidae). It is a good match for the photo of *Tibellus duttoni* in Guarisco, Cutler & Jennings' 2003 (p9) *CHECKLIST of KANSAS CRAB SPIDERS* but also for the photo of *Tibellus oblongus* in Larry Weber's 2003 (p157) *SPIDERS of the NORTH WOODS*. However, Jennings & Cutler 1996 (pp9-11) *CRAB SPIDERS of RAMSEY COUNTY, MINNESOTA* note that *T. oblongus*, *T. duttoni*, and *T. maritimus* are reliably separable only by microscopic structures. Guess to be on the safe side, I would just call it *Tibellus sp.* ? Those spiders can be tough to identify. Thanks again for another great issue.



OBLONG RUNNING CRAB SPIDER
(*Tibellus oblongus*)

GENE DRECKTRAH
Oshkosh, Wisconsin

Since the critter in the June 2007 Newsletter is obviously NOT an insect, I consulted with my good friend, and also a retired UWO faculty member, Dr Jack Kaspar, for some help on this one. He's VERY knowledgeable when it comes to 8-legged creatures. Jack said that it is one of the "crab spiders" in the Family Phylodromidae. He said it was a *Tibellus sp.*, probably *T. oblongus* (or maybe *T. maritimus*) but he couldn't say for sure because he cannot see the number of spines on the metatarsi. Also, he said that genitalia are used for I.D. if it is an adult (and we cannot see that on the photo). So, Jack knows spiders and I know Jack and have confidence in his I.D.



The Amazing Mosquito Hawk

Flight is a complicated mechanism. Birds, mammals, reptiles, insects, and even some fish fly or at least glide through the air in controlled flight.

The dragonfly is among the best fliers in the animal kingdom. It can beat its four wings in unison, or separately, depending on the maneuver it wants to make. Dragonflies can fly at speeds up to 25 miles an hour and even faster. They can hover, take off backward and even make an unbanked turn.

The dragonfly eats small insects, including mosquitoes, earning it the nick-name "mosquito hawk." A dragonfly can see a gnat from three feet away, fly to it, capture it and return to its original position in a just over one second! Flight muscles amount to ⅛ to ½ of its body weight. Its two eyes have a total of 60,000 lenses and are situated so that its range of vision is nearly 360°. Dragonflies not only appear in fossil records fully formed, but in much greater variety than today.

One fossilized dragonfly was the size of a crow! Even the United States Air Force has studied the dragonfly to learn how it flies.

Ref: Richard Conniff, *The Lord of Time*, *Reader's Digest*, June 1999.

Fireflies in the Meadow

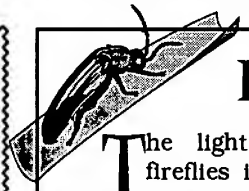
Little lamps of the twilight
Flying low through the air,
Illuminate the meadow
And all creatures living there.

Gazing through our window
We often wonder why,
They light up for a moment,
Then disappear into the sky.

Are they rehearsing for greater flights
Way beyond the blue,
To return to us as shooting stars
In every sparkling hue?

—Janice Stiefel

Hundreds of fireflies light up our Door County meadow on many summer evenings. It's like watching a sky full of shooting stars and is something that has to be seen to believe. I wished there was some way to record these special occasions on film, but all I could do was write this simple verse: JS



FIREFLY TIDBITS

The light created by fireflies is called cold light because it is produced without creating any heat. To make a flash, the firefly must make and mix a chemical called luciferin with oxygen and an enzyme called luciferase. This mixture is combined with a catalyst to create the flashes of light. The result is a method of producing light that is far more efficient than any source of light in your home. A relatively tiny amount of energy creates a generous amount of light.

Each species has its own light language, helping males to identify members of their own species. Females who are not ready to mate or who have already mated communicate these facts to the overhead male. Evidence indicates that at least one firefly species understands and can speak "foreign" firefly language. Females of this species will lure males of other species down by using the male's language and pretending to be a female who is ready to mate. When the male comes close for mating, the female captures and eats him.

You can "speak" firefly, too, if you have a flashlight. First you must cover the flashlight so that it emits only a tiny point of light. Then, after carefully watching the patterns of the female fireflies in the area, try to mimic that pattern. If you do this correctly, male fireflies will come to investigate your flashlight.

Ref: Creation Moments 2005 and 2006.

Northern Black Widow Spider
Latrodectus variolus
Photo: Janice Stiefel

NORTHERN BLACK WIDOW SPIDER IN DOOR COUNTY

Kate Houston, of Ephraim, brought this black spider, with red hearts on its back, to the house on June 6, 2007. She had identified it as a Black Widow, but we had no idea that they were found in this part of the country. I photographed it and since we aren't supposed to have poisonous spiders in our area, I poked it a few times with my fingers to get it to cooperate for a photo-op. I sent the photo to Phil Pellitteri at the Insect Diagonostic Lab and Steve Krauth, of the UW Insect Research Collection. Steve said, "*The image is a Northern Black Widow. More common than you would think but very retiring and not to be messed with.*" Phil said, "*All the records of the Northern Black Widow I have seen in the State come from Door County. No idea why.*" (See photo in color at http://bugguide.net/node/view/129497)

Larry Weber's *Spiders of the North Woods* says, "Venom of the Northern Black Widow may be as potent as the Southern Black Widow, but these spiders are timid and non-aggressive. The bite is not particularly painful and may go unnoticed. An hour later strong abdominal cramps develop. The pain and cramping can effect breathing. Lethal in less than one percent of cases." Larry says, "They are found in undisturbed woods and grasslands, stumps, under logs, stones, stone walls and entrances to abandoned animal burrows. May be among bushes and trees in dry regions. Very rare in the North Woods. Has been recorded in the northern part of Lower Michigan."

Female body is 3/8—1/2 in.; males are much smaller. The abdomen is globular and shiny black with red spots down center of dorsum. Red "hour-glass" under the belly is in two parts.; not joined in the middle. Male is smaller with four white bands on sides of a thin abdomen. Legs are thin, black and hairy. Only bites when disturbed. NOTE: I tried to get the spider to lay on its back, so I could photo its underside, but it did not cooperate. I'm fortunate it didn't bite me !!

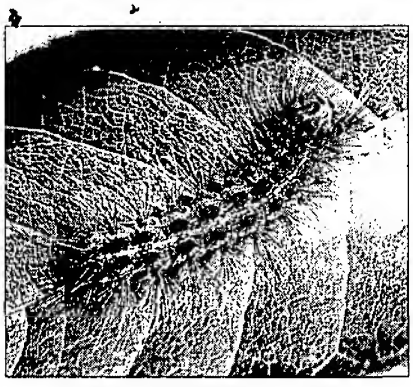
Larry Weber says, "The egg sacs are pear-shaped, pale gray, tan or yellow. They are placed in the web and guarded by the female. Adults mature in the Spring and then mate. Spiders overwinter as adults or in the penultimate stage."

— Janice Stiefel

GYPSY MOTH OBSERVATIONS

Article and Photos by Janice Stiefel

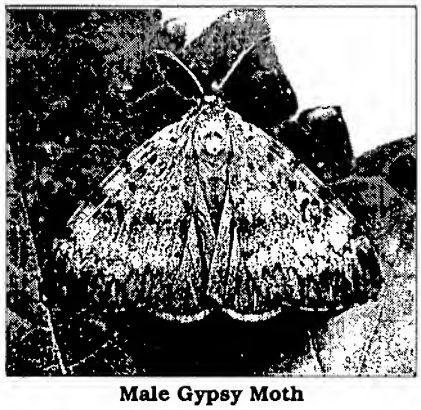
Over the years, I have been observing Gypsy Moths haphazardly—never really paying that much attention to them. However, the summer of 2006, I found a small bristly caterpillar eating Choke Cherry (*Prunus virginiana*). The same day, I also found a similar, somewhat larger, caterpillar on Alder (*Alnus*). I reared them both on their respective host plants. Except for the slight difference in size, I determined they were Gypsy Moth larva. The larger one started pupating by wrapping itself in leaves of its food plant. The pupa was visible from the outside. The smaller larva pupated later in the day. I observed that there was a big difference in the size of these pupae. I showed it to several people and we all thought they must be different species.



Mature Gypsy Moth Larva

Female pupa on the left, male pupa on the right.

A female Gypsy Moth eclosed from the larger pupa. The next day a male Gypsy Moth eclosed from the smaller pupa. In all the years I've reared caterpillars, I've never observed such a size difference in the same species. (See photo on left below and in color at http://bugguide.net/node/view/70479/bgimage).



Male Gypsy Moth

Female Gypsy Moth

Gypsy Moth larvae are a frustrating problem. However, it appears that our Creator provided an answer all along. There was an interesting article about Gypsy Moths in a 1983 issue of *Discover*. I referred to this article in the June 2006 issue of the *WES Newsletter*. To refresh your memory, it said that a Gypsy Moth caterpillar infestation can strip the leaves from large numbers of trees. Since they don't have a means of escape, it doesn't seem as if the trees have much of a chance. However, botanists were tipped off to the possibility that trees may not be all that defenseless when they began to investigate why only a few trees were badly damaged by insects in an infected grove, while most stood unharmed. They discovered that when facing a threat like Gypsy Moth larvae, trees begin to defend themselves by communicating with each other and sounding the alarm. They know that before insects attacking one tree can get to the tree next door, the second tree has already begun defending itself. When under attack or given notice by other trees of an attack, most trees begin to fabricate an array of poisons. Some of the poisons make leaves impossible to digest while others kill the insects outright. Some make as many as eight poisons at once, and many can change the poisons that are made from year to year.

In *Wily Violets & Underground Orchids: Revelations of a Botanist* by Peter Bernhardt, he states, "Trees and insects have been designed with careful and intricate balances. The many different kinds of trees each produce poisons in order to protect themselves from insects. But there is still balance since insects, too, need to make a living. Not every insecticide produced by a tree is poisonous to every insect. So a tree's insecticides simply limit the number of insects that can feed on it. Most of the insecticides manufactured by trees involve subtle and complex chemistry. One poison fools the insects' system into thinking that it is an essential amino acid—with fatal results."

Several years ago, there was an article in *The Ohio Lepidopterist* stating that Gypsy Moths have been munching foliage in New England since 1869 and the forests there are still alive and well, and so is tourism. They said large-scale spraying has not been an effective policy, since it disrupts the forest ecosystem, killing many other species, as well.

Wisconsin Entomological Society

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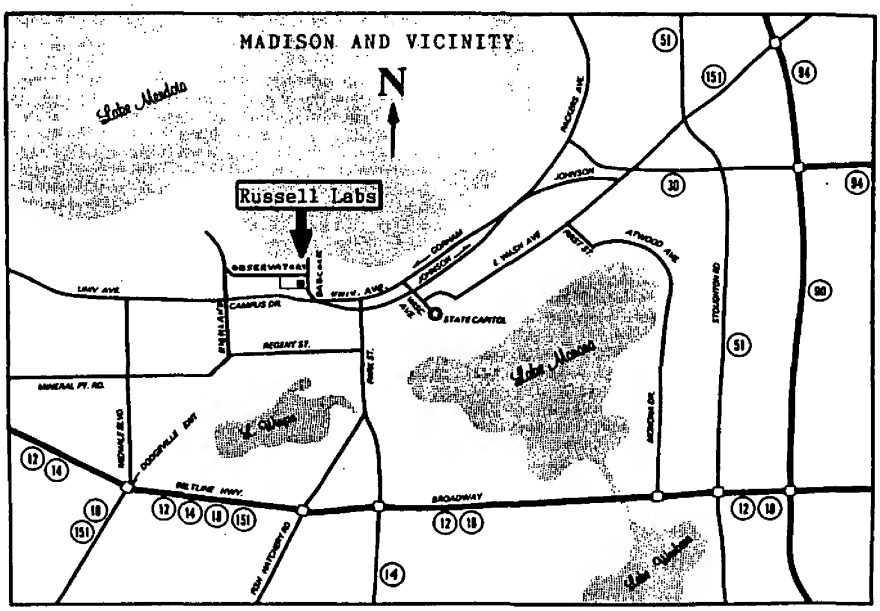

DIRECTIONS TO RUSSELL LABS MADISON, WISCONSIN